1-1-2009

Green Roots 2009 Annual Report

Lawrence University

GREEN ROOTS

THE SUSTAINABLE LAWRENCE INITIATIVE

2008-09 Report on Activities

Introduction:

Green Roots: The Sustainable Lawrence Initiative was launched officially at the Matriculation Convocation on September, 25 2008. The goal of the initiative is to focus the attention of the university at large on issues pertaining to sustainability. To that end a committee was formed and charged with task of coordinating university operations and programming related to sustainability.

Membership:

Because the GR initiative is campus wide, representation from all divisions of the college, non-teaching faculty, and two LUCC appointed students were included. The committee for 2008-09 consisted of the following members:

Jeff Clark (Geology and Environmental Studies) *
Andrew Knudsen (Geology and Environmental Studies)**
Monica Rico (History and Environmental Studies)**
Stewart Purkey (Education and Environmental Studies)
Andy Mast (Conservatory)
Rob Neilson (Art)***
Julie Fricke (Librarian)
Nancy Trusedell (Dean of Students and Vice President for Student Affairs)
Jess Vogt (Greenfire; LU 2009)
Vince Dyer (LUCC; LU 2010)
Syed Abbas (LUCC; LU 2010)***

*Faculty Associate to the President
** Co-chair
***Term I only

For the 2009-10 academic year Brit Oleson (LU 2010) will replace Jess Vogt as the Greenfire student representative, Jason Brozek (Government) will replace Stewart Purkey and Dan Meyer (Director of Facilities Services) will be added ex-officio.

Mission Statement:

The first goal of the committee was to define a mission statement which would guide our work.

> This is a critical moment in the Earth's history. Though reasonable people may debate the causes and disagree about what is to be done, there is little doubt that humanity faces significant, global environmental problems affecting the quality and sustainability of human, and non-human, life on this planet. At such an historical moment, Lawrence and other institutions of higher education have an obligation to respond. Therefore, Lawrence University is launching Green Roots, a two-year long environmental initiative that will establish the framework within which we will initiate

specific institutional policies and procedures to “green” the Lawrence campus and cultivate the habits of mind and disposition that lead to care of the Earth.

As we embark on this campaign, we want to emphasize that the complexity of the environmental problems we face (e.g., resource depletion, soil erosion, global warming, species extinction, environmental degradation) demand careful study and analysis of the issues, creativity in seeking solutions and common ground with those whose perspectives differ, and, of course, critical and imaginative thinking – all of which are fostered in the liberal arts. Care of the Earth, therefore, begins, as it must at a university, with the disciplined study of the liberal arts necessary to ecological intelligence and the commitment to living in an environmentally sustainable manner.

Care of the Earth, as poet and novelist, Wendell Berry, reminds us, also begins with care of the places where we live and work. These are the places, the cultural and geographical landscapes, that shape us as individuals and as peoples, and in which we sink roots that nourish and sustain us. It follows, as the philosopher Nel Noddings argues, that responsible global, as well as local, citizenship demands an understanding of and sympathy for people’s attachment to place. Responsible citizenship also requires, we would add, that we act in a manner that cares for the places in which we, and others, live and work. Hence, the hallmark of an educated person in the 21st Century must be knowledge of the places we call home, an awareness of their interconnectedness, and an acceptance of our civic duty to act in ways that protect their wellbeing. This too, we believe, must be inherent in the study of the liberal arts at Lawrence.

Care of the Earth requires that we approach the natural world with the same sense of wonder that famed biologist, Rachel Carson, wished could be the gift to every child as an “unfailing antidote against the boredom and disenchantment of later years, the sterile preoccupation with things that are artificial, the alienation from the sources of our strength.” A sense of wonder, moreover, that can be the source of the hope and optimism with which we work to protect the environment. This sense of wonder must infuse our scholarly and artistic endeavors and, indeed, become characteristic of a liberal arts education at Lawrence.

Care of the Earth, then, requires rigorous, scholarly exploration of environmental issues, a placed-based education, and the nurturing of wonder and delight in the natural, and human-made, world. At the same time, care of the Earth cannot happen if we do not translate knowledge into action, attitudes into behavior. In this we are guided by Aldo Leopold who reminds us, by his life as well as his writings, that the “land ethic” essential to our survival is expressed by what we do in the world, and not

simply by what we know or profess. All of this, therefore, will underlie Green Roots at Lawrence throughout the next two years.

As part of this process, we will implement a variety of curricular and co-curricular projects across the natural and social sciences, humanities and fine arts; sponsor public events addressing environmental themes and issues; establish links with other institutions and organizations that have similar commitments to environmental stewardship; and seek ways to conserve resources and reduce Lawrence's environmental impact. Our intent is that Green Roots will spread throughout the Lawrence community and to all aspects of campus life, including student groups and activities, intercollegiate athletics, artistic endeavors and performances, the preservation and maintenance of college grounds and buildings, and our relationships with the local community.

Although the next two years will witness an intense, campus-wide focus on the environment, we recognize that this is simply the beginning of an on-going process of liberal education at Lawrence that prepares our graduates to sink deep, green roots in their communities and commits them to environmental stewardship wherever they call home.

Summary of 2008-09 Year:

With guiding principles in place, the committee conducted a comprehensive review of university operations in the eight major areas; Water, Food, Buildings, Curriculum, Energy, Waste and Recycling, and Transportation. Within each of these areas the committee worked to identify and prioritize opportunities. What follows is a summary of our findings and future recommendations. Note that the committee does not intend to take credit for all of what follows. Rather, in our efforts to coordinate sustainability efforts and to publicize those, we present all activities of which we are aware in each of the focus areas. In many instances Green Roots worked in collaboration with existing campus groups like Facilities Services, ITS, Dining Services, Greenfire, LUCC Committee on Environmental Responsibility, Communications, and Admissions.

Water

Water use on campus is dominated by residential, dining, and grounds keeping. To date no conservation practices or policies are in place. A new dining and food prep facility with modern appliances should help reduce the amount of water used to prepare and deliver food. Dining services agreed not to use bottled water in catering, but follow-through has been uneven. This is something to pursue with Bon Appétit (BA) next year. The committee was very pleased with BA's willingness to work with us on this and other initiatives.

The main residential uses of water are in showers, laundry, and flushing toilets. Toilets are replaced with low flow models (according to code) whenever renovations are made. Low-flow shower heads were explored, but it was noted that in the past low flow heads were removed and in some cases replaced with more luxurious showerheads by students. Further action on this matter was tabled. Upgrading washing machines to more efficient models would also help save water. Not all residence halls are metered which makes comparison between halls and identification of high use areas difficult.

The main buildings and grounds use of water comes in irrigating the athletic fields and the Sustainable Lawrence University Garden. Megan Bjella presented ideas about water usage on athletic fields, developed as part of an independent study project. At this time, the Athletic Department recommends against cessation of watering on athletic fields, because of the need to maintain high-quality and safe playing surfaces. However some fields like the softball and baseball fields will be not be watered during the summer because they will not be used for competition until the next spring. Football and Soccer Fields however need to be maintained throughout the summer. Other lawns around the campus are not watered regularly. SLUG has adopted a drip irrigation system for ½ of the garden with plans to expand after the River Walk construction is complete.

Future Work:

- Consider installation of low-flow shower heads
- Water meters in all residence halls
    - hold a water-saving contest between residence halls
- SLUG to go 100% drip irrigation

Food

Appleton, WI is surrounded by a sea of agriculture. However, most of the fields are in commodity products like corn and soy or forage for dairy. Fortunately there are a number of local farms, orchards, and dairies in NE Wisconsin. Last year Dining Services (DS) estimated that approximately 8% of the food served in LU dining facilities came from local sources including the Sustainable Lawrence University Garden (SLUG). Last year SLUG supplied ~2200 lbs of produce to Dining Services. SLUG also helps DS divert nearly all kitchen prep waste (~50lbs/day) from the landfill to SLUG's composting operation.

Next year LU will contract out dining services to Bon Appétit. In conversations with BA representatives and local managers they agreed to continue to support SLUG through purchasing of produce at market prices and to increase the proportion of locally-sourced food to as much as 20%. The new dining and food prep facilities within the Warch Campus Center will also bring new opportunities. Dining will be trayless, which studies have shown will reduce food waste, over eating, and water usage. New Energy Star appliances should also reduce energy and, as mentioned above, water consumption.

Future Work:

- Continued collaboration with Bon Appétit

- Expansion of composting program to include post-consumer waste
- Continued collaboration with students in SLUG to maintain strong garden program and connection with Fox Cities Community Gardens Partnership.

Buildings

During the 2008-09 academic year, Lawrence did not have any LEED-certified buildings or a policy about sustainable building. The Warch Campus Center was under construction, but was not yet complete. The recent financial crisis shifted attention away from long-term planning issues towards more immediate considerations. This area was not a priority for Green Roots in 2008-2009.

Future Work:

- Develop a policy that can be used to guide new campus construction and renovation according to sustainable principles
    - Learn from/document the WCC LEED process
- Revisit recent remodels like Youngchild to see if it is LEED equivalent.

Curricular and Co-curricular

When Green Roots began in Fall 2008, the Environmental Studies program was well established and included cross-listed contributions from 11 different departments. The chemistry department added two cross listed courses for the next academic year. Freshman Studies has a history of occasionally including works with an environmental focus, most recently *A Sand County Almanac* by Aldo Leopold. Marcia Bjornerud's *Reading the Rocks* had already been selected for the 2008-2009 Freshman Studies syllabus and was renewed for the 2009-10 year.

Co-curricular "green" programming on campus was haphazard and highly dependent upon the interests of particular faculty members, student groups, and speakers. The one constant event year after year was Greenfire's tradition of hosting an Earth Day celebration. Last year, Green Roots expanded Earth Day into an Earth Week with five days of themed activities (see below). Green Roots member Jess Vogt, also a member of Greenfire, served as a liaison between Lawrence's Earth Day events and the events at Habit for Humanity's ReStore on the east side of Appleton.

Green Roots Committee members Monica Rico and Andrew Knudsen served on the Committee on Public Occasions, helped select honorary degree recipient Virginia Steffensen Purdy '38, and suggested and reviewed next year's environmentally-themed Convo speakers. Green Roots also collaborated with Development on a Green Roots video contest. Lastly, by creating and maintaining the web site and blog and by hosting several community meetings, Green Roots raised awareness about environmental issues on campus generally.

Future Work:

- Follow up on the possibility of a "community read" project;
- ENST 300: Symposium on Environmental Topics will focus on sustainability and college campuses
- Collaboration with Government Department to include environmental speakers as part of Winter and Spring Povolny Lecture series.

Presentations about Green Roots

Campus-wide Town Hall meetings in Fall and Spring
Presentation to Board of Trustees
Presentation to Alumni Board
Presentation to Founders Club
Presentation to Boynton Society
Lunch at Lawrence Presentation

Sponsored and Co-sponsored Events

Spoerl Lecture Series in support of ENST 300: Environmental Studies Symposium – Water Wars

January 13
"How Can Lessons from China and Wisconsin Help Us Improve Conservation on Private Lands?"
Jeb Barzen

January 20
Great Lakes Water Compact: Now What?"
Peter Annin

February 3
"Water is for Fighting: Water Conflicts and Crises in China and the US"
Jennifer Turner

February 11
"What China is Doing Right Environmentally"
Phil McKenna LU 99

Earth Week Events and Speakers

April 20: Food and Agriculture Day
- Hands on Gardening with SLUG
- Welcoming Remarks and conferral of honorary degree to Virginia Purdy (LU '39)
- "Food vs. Agricultural Biotechnology" by Andrew McCann

April 21: Waste Reduction Day
- "Mount Trashmore" – a visual display of waste and recycling at LU facilitated by Residential Life staff
- "Where Does Your Waste Go?"
  An Overview of the Outagamie County
  Solid Waste and Recycling Facility followed by
- "The Story of Stuff" by Annie Leonard

April 22: Global Climate Change Day

- "Climate Feedbacks and Greenhouse Gas Emissions in Northern Peatlands: Meltdown of the Great White North"
  Jeffrey White

April 23: Environmental Art Day
- "Primitive Ways in an Accelerated World" by Patrick Dougherty
- *Also sponsored Student Art Projects in ART 570: Advanced Sculpture*

April 24: Green Music Day
- Lawrence University Wind Ensemble
  "Music for Sea and Sky"
  Directed by Green Roots member Andrew Mast

Other Speakers:

February 3
"A Cenozoic History of Atmospheric Carbon Dioxide"
Mark Pagani

April 27
"Medical Geology: The Interface between Environmental Engineering and Public Health: Case Studies from the Urban Environment"
Dan Brabander

May 4
"Thinking Like a Homeowner: An Environmental Ethic for the Twenty-first Century"
Gregory Summers

May 20
"Rich Food for All People"
Will Allen

Energy

As with most campuses that are in excess of 100 years in age, the HVAC system is complex and consists of modern new systems and older ones that have been updated over the years. Much of the focus of facilities services in the past few years has been on moving to a decentralized boiler system that is more efficient and engaging in energy conservation measures such as updating windows and lighting in campus housing as spaces are renovated.

One problem with the Lawrence University system is that few individual buildings are metered, so only an aggregate view of energy consumption is possible. Nonetheless we can establish some gross benchmarks for future comparison.

In 2008 we consumed 1,335,958 therms a year from natural gas for heating this amounts to 1,335,958 therms X 12.1 lbs CO_2/therm = 16,165,091 lbs of CO_2 or 7,348 metric tons. (Conversions and Emissions factors from EIA). We also consumed 12,826,927 kWh of electricity and this amounts to 12,826,927 kWh X 1.64 lbs CO_2/kWh = 21,036,160 lbs CO_2 or 9,562 metric tons. So total HVAC emissions are 16,910 metric tons of CO_2.

In comparison to future years we need to account for the square footage of building space in addition to the weather. In 2008, the number of heating degree days was 8266. One heating degree day unit (HDD) is given for each degree that the mean temperature is below 65 degrees F (Geer, 1996). The aggregate square footage of campus buildings was 1,357,000 or 1.357 million sq. ft., So the natural gas consumption per million sq. ft. per HDD is 1,335,958 therms/(1.357X8266) = 119.

Likewise, electricity consumption per million sq. ft per Cooling Degree Day (CDD) is 12,826,927 / (1.357X664) = 14,235.

Without more detailed reporting it is difficult to determine which buildings are the least efficient and therefore which ones might be most cost-effective to improve. A priority of facilities services should be to eventually meter all buildings on campus. Doing so would not only allow Facilities Services to track individual building, but can also allow creative energy conservation incentives like competition between dorms, where each dorm's energy usage could be displayed on a website for easy comparison. A display in the common space of each dorm would also serve as a reminder of how much energy is being consumed. Research has shown that this type of feed back results in 5-10% savings in energy usage, simply because people can see what they are using in real time (Darby, 2006). This is especially important for students who do not get a monthly bill to connect them with the impact of their lifestyles.

Green Roots, in consultation with facilities services, focused its efforts on developing a policy for temperature set points in academic buildings (See Appendix). The LUCC committee on environmental responsibility also endorsed a similar policy for dormitories. Together these measures should save an estimated 6-8% on our energy consumption over the next year. The change in academic calendar for next year is estimated to reduce consumption by an additional 5%.

Another major energy use on campus is computers and related equipment. In working with Instruction Technology Services and the Technology Advisory Committee the following changes have taken place. Computers in residence halls go into "stand-by mode" after 30 minutes; those in academic buildings go into stand-by twice a day 6 a.m. & 8 p.m. In another effort, the faculty was encouraged to give up their office printers. Unused printers plugged in still use some power and ink cartridges dry rapidly in infrequently used printers creating more waste.

Future Work:

- Develop a series of BMP for office/room heating and cooling.
- Residence Life training (heating/cooling, recycling, etc.)
- Work with Greenfire on a vampire elimination campaign
- Continue exploring possibility of wind power at Bjorklunden
- "Turn it off" campaign with stickers on bathroom and other switches not already on motion sensors.
- Meter all dorms and academic buildings*
- Put Music and Drama center on own boiler*

- Upgrade air handler in Science Hall*
- Upgrade lighting in library – more timers/motion sensors*

  * Requires investments in infrastructure

Waste Reduction and Recycling

A popular mantra than can be applied to any resource is Reduce, Reuse, Recycle. The order of the mantra is important for reducing the amount of consumption is the most effective environmentally.

Reduce:

We focus here on efforts to reduce paper use on campus. Other reductions such as energy, food, and water are discussed in their own sections. Last year we estimate that the campus purchased 4590 reams of paper. The print shop alone used 1500 reams. Though there was not a concerted paper reduction campaigns *per se*, various offices were phasing out paper in an effort to cut costs and/or increase convenience. For example:

- Library printers and computer labs were configured to go double-sided and most copiers on campus can do double sided.
  - All new/replacement printers will be double-sided capable
- Printer release monitors installed in Library as a pilot
- Course catalogs won't be printed (saves ~180 sheets X1500=270,000 sheets)
- Combined report on Giving/President's report (saves ~10sheets X24,000=240,000 sheets)
- Tried a program-free concert
- Recipients of *Lawrence Today* can opt to receive this publication electronically.
- Admissions is committed to “paperless” review of student applications (savings ~25,000 sheets)
- A few courses have gone paperless with all documents and assignments disseminated, collected, and graded electronically.

We estimate that the above changes will save approximately 525,000 sheets of paper next year.

We have also taken steps to increase the amount of “green” paper on campus. For example, the environmental studies department uses 100% post consumer recycled paper for its printing, but is unique in that regard. To move the entire campus to 100% post-consumer recycled paper (~$0.54 more per ream) would cost an estimated $2300. To move to 30% post-consumer paper (~$0.40 more per ream) it would cost approximately $1800. *Lawrence Today* is now printed on Forest Stewardship Certified (FSC) paper manufactured w/in 100 miles of our printer.

Future Work:

- Faculty education on double-sided printing
- Work with Honors committee to accept double sided honors projects
- Follow up with the registrar on getting rid of paper notifications; they can't generate these automatically b/c of software issues, but could they simply attach the document that they print out as an email instead of printing it out?
- Adopt use of recycled paper campus wide*
- Electronic submission of tutoring reports from the CTL
- Lower print runs for Conservatory programs

*Requires monetary investment.

Reuse:

Opportunities for reuse are somewhat limited. Computers are routinely cycled through the faculty and student labs. Many faculty allow students to use the back of already used paper for assignments. Central Services (CS) makes scratch pads out of unused print runs.

Future Work: GR is trying to set up a mechanism by which old flyers can be sent to CS to be bound and cut into scratch pads. The campus in general should be educated about the availability of the scratch pads.

Recycling:

At Lawrence University we have been recycling for at least 10 years. Lawrence University recycles all paper products as well as glass, aluminum, and plastics. LU uses Waste Management (WM) as their waste and recycling hauler. Last year we generated 18,810 cubic yards of waste, of which 5975 yards was recycled material. Our waste diversion rate is therefore 32%. Last year WM went to single stream recycling, and GR has been working with Greenfire, Sara Groton of Facilities Services, and Student Life to develop a new streamlined recycling plan for campus which should be in place by this fall. LU contracts with an outside vendor for disposal and recycling of old computers and consumer electronics.

Future Work

- Work with Greenfire and Residence Life on recycling campaign
  - educate campus about single stream recycling
  - develop Campus Center recycling center for old cell phones, etc.
- New Campus Center and disposables: follow up on report from Megan Bjella and commitments from Greg Griffin about not using plastic bags, reusable to-go containers
- Double check on reputation of our electronics recycler.

Transportation

For 2008-09, Lawrence ran shuttles to Woodman's and the mall. The University paid for student parking in the downtown parking ramps as a temporary measure to alleviate

pressure on 24-hour student parking during the construction of the Campus Center. There were no measures in place to encourage carpooling or transit use. However, Hayley Vatch ’09 started the LU Bikes program with funding from the Class of ’65 Grant. Ten bikes, helmets, and locks can be checked out with a LU ID. The program has been successful, with 208 uses in the first 15 days. The program will be expanded next year and based in the Warch Campus Center.

GR explored the possibility of a student-fee funded “pass” that would, for between $3-$5 per student, allow that student unlimited rides on Valley Transit. This proposal would require action from LUCC. The Environmental Committee and the Student Welfare Committee have both discussed the idea. The entire council also discussed the idea and rejected it, because buses do not run frequently enough to be convenient and do not serve the places that students frequently go. GR will continue dialog with Valley Transit to see if routes can be modified.

Stephen Flynn ’09 gathered data on the reasons why students bring cars to campus. As a result of his work, LUCC decided to run more shuttles to the mall and Woodmans. The Parking Committee began developing a system of fines for parking violations. Campus Life began developing a website (in addition to the long standing ride board) for coordinating carpools that will be available to faculty, students and staff.

For 2009-2010:

- The expanded van service will be assessed in the middle of fall term.
- Parking ramp costs will again be charged to students as will passes for the 24 hour student spaces
- An area near the Banta Bowl will be reserved as free parking for students who do not need their cars often.
- GR may explore the “Zipcar” concept further.
- GR continue to explore routes with Valley Transit.

Other Areas:

Grounds

The following comes from Megan Bjella as part of her independent study and as a SLUG representative. The Lawrence University Grounds Department largely relies on sustainable practices designed to decrease reliance on chemical lawn applications for campus green spaces. Grounds Department workers over-seed and aerate the lawns frequently, mulch leaves, and have soil samples taken. Lawrence University outsources its minimal application of pesticides, herbicides, and fertilizer to TruGreen. Fertilizer and weed control are applied on an ‘as-needed’ basis—roughly once every other year, campus-wide. To increase its effectiveness, these treatments are applied in the fall, if they are applied at all. The fertilizer applied contains no phosphorus. Roundup is applied selectively, approximately twice a growing season, as needed.

Athletic fields on campus require considerable more treatment than the main campus green areas. For example, last year the Banta Bowl had 6 applications of fertilizer as well as 2 weed spot treatments. Though this is fewer treatments than previous years, it is still a considerable amount. The non-chemical lawn care program for athletic fields consists of aeration, over-seeding, and top-dressing with sand. This is supplemented by an aggressive watering schedule and regular chemical treatments. The athletic department notes that these fields have to be well maintained to ensure a safe, high-quality surface for athletes.

The baseball/softball fields are particularly problematic; though their seasons end in May, the fields continue to be maintained to the level necessary to facilitate practices. Since they are roughly twice the size of the Banta Bowl, these fields require a considerable allocation of resources and time. In the summer of 2009, the watering frequency was greatly reduced for these fields.

Future Work:

- Consider switching to TruNatural, TruGreen's 'environmentally friendly' line of lawn care products. It would be more expensive, but given the infrequency of lawn treatments, it may be a worthwhile investment demonstrating the college's commitment to sustainable practices. Facilities Services should investigate the feasibility of switching to this product.

References Cited

Darby, S., 2006, The Effectiveness Of Feedback On Energy Consumption, Environmental Change Institute of Oxford University.

Energy Information Association (www. EIA.doe.org)

Geer, I. W., 1996, Glossary of Weather and Climate, American Meteorological Society, Boston, MA 272 p.

Appendix – HVAC Policy

To: Lawrence University Faculty and Staff

From: Jeffrey J. Clark, Faculty Associate to the President for Green Roots: The Sustainable Lawrence Initiative

Re: HVAC Energy Reduction Measures

The Green Roots committee would like to provide more information about the HVAC policy that was presented at the faculty meeting in February. The overarching objective of this policy is to reduce our use of non-renewable resources and our carbon foot print (carbon dioxide emissions). These are laudable goals in their own right, but in this difficult economic environment, cost savings are of paramount importance. It is our hope that money saved via this initiative might help ward off deeper financial cuts in other areas of the university. So we write here to appeal to your inner "greenness," whether that be in the environmental or monetary sense.

The policy presented at the faculty meeting was generated by the Green Roots committee in conjunction with Facilities Services (Physical Plant) and endorsed by the President's cabinet. The goals are ambitious and we recognize that it will take time and careful study to implement them. Many of you have identified issues related to such matters as the need to protect sensitive instruments and equipment. We thank you for this input as it will be used to identify 'sensitive' spaces and to craft future versions of an HVAC policy. We hope that what follows will help clear up any confusion and address many concerns.

The first phase of implementation, which we hope to begin by mid March, is to set the academic and administrative buildings at a constant temperature of 68 degrees. During this time Facilities Services will carefully monitor the temperature in all spaces and work to establish a consistent temperature day and night. They will also look for rooms that are outside of the set temperature and will be calibrating thermostats. <u>There will be no diurnal temperature fluctuations at this time.</u> Later this spring, Facilities Services will experiment with allowing the temperature to drop to ~65 degrees over the weekend to see how long it takes the buildings to cool down and warm back up. Over the summer the buildings will be maintained at 76 degrees with experimental warming to 80 degrees on the weekends.

As mentioned above, many spaces on campus house sensitive instruments, specimens, and collections. We ask that you work with your building coordinators and notify them as soon as possible if you have a 'sensitive' space. Also indicate what temperature regime would be needed to protect items, in those spaces keeping in mind the importance of reducing energy consumption. Facilities Services will review this list and <u>no changes will be made until they are confident that they can work within the constraints of particular work spaces</u>.

The program will require everyone to make some sacrifices. It is important that this program is successful in maximizing energy savings. We will work to collect good data for future planning. We ask for you cooperation as we work to improve the efficiency of our operation, save natural resources, and reduce our emissions.

To: Dan Meyer, Director of Facilities Services

From: Jeffrey J. Clark, Faculty Associate to the President for Green Roots: The Sustainable Lawrence Initiative

Re: HVAC Policy Room Variances

Based upon feedback from building coordinators, the following spaces require special attention as we implement the HVAC policy of a steady 68F for the heating season and 76F for the cooling season.

Mudd Library: 68F in winter is fine, but there is concern that humidity levels will be too high during the summer if temperatures reach the mid seventies.

Wriston Art Center: The Galleries and their storage areas and the Visual Resources Library. These areas need a constant temperature of 68-70 year round. Frank Lewis (6942) and Colette Lunday Brautigam (6043) would be happy to explain the temperature concerns for the galleries and VRL respectively, if you want more technical information.

Youngchild Hall:
Psychology: 009, 010, 011, 012, 013, 014, 017, 019 should be kept at a steady 70F 24/7 during the academic year but can rise to 76 during the summer unless otherwise notified.

Biology: The Animal Facility - Y 021, 022, 023, 024, 025, 026 can be kept at 68F winter but no more that 74F summer.

Y 329: Bryotron should be kept at a steady 70F 24/7

Geology: Y 232 (X-Ray Lab) can be at 68F for winter but should be at 72F in summer

Physics: Y 138 (Computational lab) can be at 68F for winter but should be at 72F in summer

Briggs Hall

Biology: The Greenhouse (also the preparation room which is BH 108) should remain unchanged from current operations.

Computer Science: BH419 can be at 68F for winter but should be at 72F in summer.